

Factors associated with offering HIV testing to people aged ≥ 50 years: a qualitative study

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Factors associated with offering HIV testing to people aged ≥50 years: a qualitative study

Background: Individuals aged ≥50 years continue to be disproportionately affected by late HIV diagnosis, which is associated with poorer health outcomes and onward transmission. Despite HIV testing guidelines and high acceptability of HIV testing among all patients, clinicians are less likely to offer a test to an older individual. The aim of this study was to identify clinician-related factors associated with offering HIV testing to patients aged ≥50 years.

Methods: Twenty clinicians who had been involved in the care of an older patient diagnosed late with HIV were interviewed.

Results: Thematic analysis identified 7 factors associated with offering HIV testing to older people: knowledge, stigma, stereotyping and perception of risk, symptom attribution, discussing HIV with patients, consent procedures, and practical issues.

Conclusions: Although some factors are not unique to older patients, some are unique to this group. Many clinicians lack up to date HIV-related knowledge, feel anxious discussing HIV with older patients, and perceive asexuality in older age. In order to increase the offer of HIV testing to this group, identified clinician-related barriers to test offer need to be addressed.

Keywords: HIV, ageing, older people, testing, health care

BACKGROUND

Despite a reduction in the number of new HIV diagnoses generally(1), late diagnoses remain a public health challenge. Older individuals (aged ≥ 50 years) experience higher rates of late diagnosis(2), and late diagnosis in older age is associated with increased morbidity and mortality(1,3-5). Additionally, because an individual diagnosed late is likely to have been living with undiagnosed HIV for several years(1,6,7), late diagnosis is associated with onward transmission.

Current HIV testing guidelines in the UK recommend the routine offer of HIV testing to all general medical admissions and to anyone registering in primary care in areas of high HIV prevalence (population $>2/1000$)(8,9). In spite of these guidelines and despite high acceptability of routine HIV testing, research indicates that clinicians are significantly less likely to offer HIV testing to older patients when routine screening is offered to all acute general admissions (10). This suggests that clinicians do not always adhere to testing guidelines, resulting in missed opportunities for HIV testing and timely diagnosis in the older population. Although there is some evidence to suggest that clinicians may feel uncomfortable addressing the sexual health needs of older patients (11,12), the factors that affect a decision to offer HIV testing to an older person are not fully understood. The aim of this study was to identify clinician-related factors associated with offering HIV testing to patients aged ≥ 50 years.

METHODS

Procedure and sample

Ethical approval was granted by the South Central Hampshire B Research Ethics Committee. Clinicians were recruited from 6 hospital sites in South East England. Purposive sampling ensured representation of clinicians working in a range of specialities, and from areas of high ($\geq 2/1000$) and low prevalence ($<2/1000$). Eligible clinicians were identified via a healthcare utilisation questionnaire and medical notes

review from a previous linked study(13), and contacted via email. At a study visit written informed consent was received, a demographic survey was completed to aid sampling, and a semi-structured interview lasting approximately 45 minutes was conducted. Interviews explored general views about HIV testing and did not explore any particular cases. Interview topic guides were based on a systematic review(12), emerging results from the linked study(13), and was updated as novel factors emerged.

Data analysis

Interviews were audio recorded, transcribed verbatim and anonymised. Data were thematically analysed using the 6-step method outlined by Braun and Clark (2006)(14). Briefly, this included: (1) data familiarisation; (2) importing transcripts into NVIVO 11 for initial coding; (3) combining initial codes into overarching themes and sub-themes; (4) further reviewing and refining themes to ensure accurate reflection of the data; (5) defining themes and assessment of systematic agreement/differences depending on clinician speciality or HIV prevalence; (6) production of a report of the findings. EY, RdV, JW and KD agreed coding and interpretation at each step. All authors agreed the final analysis.

RESULTS

82 Clinicians were invited to take part in the study of which 20 were recruited (Table 1) (response rate of 24%). Clinicians who agreed to take part in the study were representative of the eligible clinicians approached. Seven major themes related to offering HIV testing to people aged ≥ 50 years were identified (Figure 1). Each theme is discussed and illustrated with quotes.

Theme 1: Knowledge

Almost every clinician had outdated HIV-related knowledge. However many had received information informally: on a patient by patient basis; from local HIV teams; or via prompts. However, clinician's

knowledge was focussed on their specialism and limited time meant the majority felt that HIV-related training was not a priority. This was most commonly reported in areas of high HIV prevalence. Despite this, some clinicians reported wanting or needing updated HIV-related information and several gave suggestions about how to achieve this: reports in general journals; visibility from HIV teams; and a short list of clinical indicator conditions tailored to their speciality. Information on identifying patients for testing, tips on offering testing, consent procedures, testing guidelines, and feedback on patients where a diagnosis had been missed were particularly valued:

I think we need to train more about ... how you bring that conversation into just a normal consultation and how do you do it in older people, I think that might be slightly different to a younger person [032, acute/emergency medicine, high prevalence]

Knowledge transfer - particularly between junior and senior staff - was a common context for knowledge sharing. Although this worked both ways, junior doctors were seen to be valuable in bringing up-to-date knowledge from other clinical specialties:

There'll be juniors coming through here that have done other specialities including non-medical specialities ... so we will learn from them about the things that they've done and they've had more up to date experience with [027, acute/emergency medicine, high prevalence]

Generally a lack of knowledge was perceived to be a barrier to offering testing to older patients, and having up to date HIV-related information was a facilitator.

Theme 2: Stigma

Stigma was closely related to poor knowledge (Theme 1), played a part in all themes, and was mentioned by every clinician. Generally, stigma was related to the association of HIV with sex between

men, or with high-risk sexual behaviour.

Many clinicians felt stigma was a “hangover” from early HIV/AIDS campaigns, and some felt that it had reduced. This was related to the perception that people were better informed about HIV, were aware of improvements in outcomes, and had more open attitudes towards sex and sexuality:

I think it's much better than it used to be isn't it? In the nineties when HIV first came to light ... there was much more stigma attached to it, whereas these days people are more educated about it [025, surgical speciality, high prevalence]

Some clinicians felt that there was additional stigma related to HIV among older people. Firstly, it was perceived that older people had experienced fear generated by early campaigns, had limited understanding, were unlikely to know anyone with HIV, and were less accepting of gay sex which was often associated with transmission. Secondly, there was a perception that HIV was a young person's disease:

They may not know someone with HIV, they may never have come across someone with HIV, they may remember some of the adverts that were out there in the presumably eighties, the tip of the iceberg type of thing, and so they may, in their own mind, there may still be a big uncertainty and stigma associated with HIV, which I think probably for younger patients, that doesn't exist as much [022, surgical speciality, high prevalence]

Although some clinicians felt that stigma may affect how they felt about offering testing, none reported it to be a barrier.

Theme 3: Stereotyping and perception of risk

Every clinician had a perception of the type of person at risk of HIV. Men who have sex with men were the most commonly identified at-risk group, and were more readily offered HIV testing:

If it's a male homosexual – then I'd have a lower ... probably have a lower threshold for asking or thinking whether it's worth doing an HIV test [024, medical speciality, high prevalence]

Injecting drug users, men, or people from “high risk” countries were also commonly reported as at-risk. However, almost every clinician considered older people to low-risk and were less likely to perform any kind of risk assessment on older patients as a result.

Theme 4: Symptom attribution

The (mis)attribution of symptoms was mentioned by all clinicians. Most felt HIV was indicated in an unusual presentation, such as ongoing symptoms or those not responding to treatment. When symptoms were ‘typical’, further investigation was not required, and HIV was not considered:

I might encounter peripheral neuropathy in my diabetes clinic, but I suppose the challenge for me is that if the peripheral neuropathy fits the diabetes diagnosis, I wouldn't necessarily go hunting for a secondary cause [031, medical speciality, low prevalence]

There was agreement that because illness was expected in older patients, further investigation was not required. This was often compounded by pre-existing comorbidities, making non-specific HIV symptoms difficult to identify. Since illness in a younger person was considered uncommon, further investigation such as HIV testing was warranted more readily in this group.

When considering a differential diagnosis, clinicians started with the most likely cause - typically within their own speciality - and commonly treated symptoms in isolation. One clinician felt this was due to specialisation of medicine. Some clinicians reported that they would only consider HIV if symptoms were reported in addition to risk factors.

When asked specifically about indicator conditions, some clinicians felt they were uncommon in their

speciality. However, others felt that some were too common to screen all for HIV:

All of my patients have got dementia, so which ones am I gonna screen then? [...] You wouldn't screen all patients with dementia [031, medical speciality, low prevalence]

Theme 5: Discussing HIV with patients

This theme consisted of two subthemes:

Approaching HIV testing with a patient

The majority of clinicians found a conversation about HIV awkward with older patients, and some felt they could not discuss testing at an initial visit. HIV was felt to be different to other conditions due to awkward language, or the perception that HIV requires additional explanation. Factors identified as facilitating a conversation included: routine testing; a prior relationship/rapport; if HIV was relevant to the consultation; and experience offering HIV testing.

Factors perceived to make a conversation more difficult included: being unfamiliar with correct terminology; lack of privacy; presence of a partner/family member; if the patient belonged to an ethnic minority group; a perception the patient was low-risk; if the patient were older:

I think our perception is, ones that are older than you and, you know, when you get into your parents' or your grandparents' generation it just feels uncomfortable to ask those questions [026, acute/emergency medicine, high prevalence]

Clinicians' perceptions of how older patients might react to being offered an HIV test

Clinicians generally felt that older patients would feel judged or offended by the offer of a test (Theme 2):

They'd probably get cross with me about it, you know: "How could they dare - How could she dare to suggest that I've been a drug user?" [025, surgical speciality, high prevalence]

Despite these perceptions, clinicians would offer testing if they felt it were clinically necessary.

Theme 6: Consent procedures

Consenting requirements associated with HIV testing was mentioned by all clinicians. For some there was confusion about what is required, and the perception that lengthy pre-test counselling was needed acted as a barrier to test offer. Some clinicians suggested that consent should be implicit as it is for other tests:

I suspect we should be moving towards an approach where it should just be that that you just, you've mentioned it somewhere and if we feel we need to test it we'll do it, and it's been implied and let's not make a big deal of it [027, acute/emergency medicine, high prevalence]

Theme 7: Practical issues

Practical factors were mentioned by all clinicians. Factors to facilitate testing included: links with an HIV team; a clear process/protocol; familiarity with testing/consenting guidelines; reminders/prompts; availability of rapid tests; routine testing; and having HIV testing as a trust priority. Time and cost were commonly mentioned as potential barriers to testing:

I'm discouraged from offering other types of tests, because of the financial implications of it. So we don't do it [...] as the service lead, am I suddenly gonna be faced by an accountant's bill, you know, in the next quarter that says "My God why have you got another £10,000 on there?", "Well we're offering everyone HIV testing" [022, surgical speciality, high prevalence]

Other barriers to testing included: a lack of clinical/laboratory capacity; patients being cared for by several teams; patients having already had bloods taken; and an inability to access HIV test results.

Clinicians working in acute/emergency medicine reported unique barriers which included: a lack of confidential space; and quick discharge of patients making it difficult to follow-up on test results. One clinician suggested an HIV nurse specialist to deliver results could facilitate test offer in these settings. Most clinicians felt that primary care would be the best setting for HIV testing. This was due to continuity of care; because patients in primary care tend to be in better health; and because testing could fit within existing services/initiatives:

Old people are often invited to general practice for blood pressure screening or well-women checks or prostate tests or blood. You know, there's always some initiative isn't there for getting people into their GPs to have screening tests and wellness checks and things, and we could just tag it onto that. Why not? [032, acute/emergency medicine, high prevalence]

DISCUSSION

This study identified seven factors associated with offering HIV testing to people aged ≥ 50 years.

Although there was some generalised agreement, there were some differences in how these factors were discussed depending on speciality or HIV prevalence. Clinicians working in high prevalence areas tended to be more anxious discussing sexual health with older patients, whereas those working in low prevalence areas reported a need to approach a conversation around testing differently with older patients. This difference may be due to clinicians working in lower prevalence areas having less experience offering testing.

Participants working in medical/surgical specialities valued HIV-related information that was relevant to their speciality. Those working in acute/emergency medicine reported unique barriers, mainly a lack of confidential space, and difficulty following up test results. These differences indicate that the design of

future interventions need to be sensitive to clinicians' differing needs.

Despite these differences, the majority of clinicians reported outdated HIV-related knowledge, which was a barrier to test offer. A lack of knowledge has previously been found as a barrier, regardless of patient age(15-17). Clinicians in the current study reported that training on clinical indicator conditions (CIC) which related to their speciality could facilitate test offer. This is particularly relevant, because a failure to recognise CICs is a significant barrier to offering HIV testing(18).

Patients registered with a general practitioner in the UK have an average of almost five consultations per year(19). Although this number has remained fairly stable in those aged 65-84 years, contacts in people aged >85 years is increasing(19). This suggests that primary care might present multiple opportunities for offering HIV testing, particularly in older populations. Findings from the current study suggested adding HIV testing to existing services in primary care such as well man/woman clinics, and clinics for the monitoring of chronic health conditions. Although recent research has also found this approach to be acceptable to older patients(20), further research is needed to understand whether this would be acceptable and feasible to primary care physicians.

Routine testing has been shown to be effective at encouraging test offer(21), which may in part be due to clinicians being able to offer the test indiscriminately. This type of testing may also be quicker and easier to offer, and has the potential to help overcome competing clinician priorities(15,22) and time (Theme 7). The current study suggested that routine offer of HIV tests may also make approaching a conversation about HIV testing easier. However, despite routine HIV testing being cost-effective in areas of high prevalence(9), and acceptable to all patients, it does not always occur.

The current study identified practical suggestions to increase HIV test offer e.g. having testing as a hospital priority; and having a clear testing protocol. However, high staff turnover and competing clinical priorities suggest interventions will need to be ongoing. The current study also identified clinician

confusion around consenting procedures. This has been found in previous research as a barrier to test offer(15,17,22) and therefore education around current consent procedures is required for testing to be successfully implemented.

As in past research, the current study found that feeling uncomfortable discussing HIV with older patients, and perceiving patients will refuse testing to be barriers to test offer(11,15,23,24). This may partly explain why the routine offer of an HIV test to older patients is significantly less likely than an offer to a younger patient(10), despite the high acceptance of testing by patients generally(21).

Stigma was identified in the current study as another prominent barrier to offering HIV testing to older patients. Despite evidence suggesting that individuals continue to be sexually active into older age(25,26), stigma regarding older peoples' sexuality has resulted in the common perception of asexuality among older groups(27). In reality, many older adults are sexually active, are less likely to use condoms(28,29), and have increasing rates of sexually transmitted infections(25). Sex remains important to quality of life in older age(30,31) and until this stereotype is challenged, sexual health needs of older patients are unlikely to be met.

Strengths and limitations

All participants had seen an older patient with undiagnosed HIV infection. This was a strength because it allowed us to understand perceived factors associated with offering HIV testing to older patients among clinicians who were either involved in a late HIV diagnosis or where a diagnosis in an older patient had been missed.

Although this was a multi-centre study, results may not be generalisable. There is the potential for selection bias in that clinicians who felt strongly about HIV testing could have felt motivated to take part in the study. Further, although clinicians working in a range of specialities were included, the sample did

not include primary care physicians. Further research is needed to verify findings in primary care.

Conclusion

This study identified clinicians-related barriers to offering HIV testing to people aged ≥ 50 years. Older people remain disproportionately affected by late HIV diagnosis, and are less likely to be offered testing despite high acceptability. Results indicate that clinicians have outdated HIV-related knowledge, feel uncomfortable discussing HIV with older patients, and perceive low risk of HIV in this group due to stigma. In order to successfully implement testing guidelines or design interventions to improve HIV testing in this group, these clinician-related factors need to be addressed.

Recommendations for practice

- **Keeping up to date with current HIV testing guidelines helps to facilitate HIV test offer. This includes being familiar with clinical indicator conditions which relate to your specialty.**
- **In areas of high HIV prevalence ($>2/1000$), routine offer of HIV testing is recommended. This approach helps to overcome missed opportunities for testing older individuals, and often makes test offer quicker and easier.**
- **Having a clear HIV testing protocol in place helps to support clinicians to offer and manage HIV testing.**

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The authors declare that there is no conflict of interest.

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References

1. Public Health England. Trends in HIV testing, new diagnoses and people receiving HIV-related care in the United Kingdom: date to the end of December 2019. In: PHE, editor. London2020.
2. Kirwan P, Chau C, Brown A, Gill O, Delpech V, contributors a. HIV in the UK - 2016 report. In: Public Health England, editor. London2016.
3. Croxford S, Kitching A, Desai S, Kall M, Edelstein M, Skingsley A, et al. Mortality and causes of death in people diagnosed with HIV in the era of highly active antiretroviral therapy compared with the general population: an analysis of a national observational cohort. *The Lancet Public Health*. 2017;2(1):e35-e46.
4. Smith R, Delpech V, Brown A, Rice B. HIV transmission and high rates of late diagnoses among adults aged 50 years and over. *AIDS*. 2010;24(13):2109-15.
5. Krentz H, Gill J. Despite CD4 cell count rebound the higher initial costs of medical care for HIV-infected patients persist 5 years after presentation with CD4 cell counts less than 350 μ l. *AIDS*. 2010;24(17):2750-3.
6. Chau C, Kirwan P, Brown A, Gill N, Delpech V. HIV diagnoses, late diagnoses and numbers accessing treatment and care. 2016 Report. In: Public Health England, editor. 2016.
7. Brown A, Kirwan P, Chau C, Khawam J, Gill O, Delpech V. Towards elimination of HIV transmission, AIDS and HIV-related deaths in the UK – 2017 report. In: Public Health England, editor. London2017.
8. British HIV Association, British Association for Sexual Health and HIV, British Infection Society. UK National guidelines for HIV testing. London: BHIVA; 2008.
9. National Institute for Health and Care Excellence. HIV testing: increasing uptake among people who may have undiagnosed HIV (Joint NICE and Public Health England guideline). In: NICE, editor.

London 2016.

10. Health Protection Agency. Time to test for HIV: Expanding HIV testing in healthcare and community services in England. London: Health Protection Agency,; 2011.
11. Gott M, Hinchliff S, Galena E. General practitioner attitudes to discussing sexual health issues with older people. *Soc Sci Med*. 2004;58(11):2093-103.
12. Youssef E, Cooper V, Delpech V, Davies K, Wright J. Barriers and facilitators to HIV testing in people age 50 and above: a systematic review. *Clin Med (Lond)*. 2017;17(6):508-20.
13. Youssef E, Wright J, Delpech V, Davies K, Brown A, Cooper V, et al. Factors associated with testing for HIV in people aged ≥ 50 years: a qualitative study. *BMC Public Health*. 2018;18(1):1204.
14. Braun VC, V. Using thematic analysis in psychology. *Qualitative Research in Psychology*. 2006;3(2):77-101.
15. Burke R, Sepkowitz K, Bernstein K, Karpati A, Myers J, Tsoi B, et al. Why don't physicians test for HIV? A review of the US literature. *AIDS*. 2007;21(12):1617-24.
16. Davies CG, M; May, MT. Public and Healthcare Practitioner Attitudes towards HIV Testing: Review of Evidence from the United Kingdom (UK). *International STD Research & Reviews*. 2015;3(3):91-122.
17. Simmons EB, M; Slye, K; Ma, M; Sutton, M; McLellan-Lemal, E. Barriers and facilitators to testing in primary care among health care providers. *Journal of the National Medical Association*. 2011;103(5):432-8.
18. Hunter E, Perry M, Leen C, Premchand N. HIV testing: getting the message across: a survey of knowledge, attitudes and practice among non-HIV specialist physicians. *Postgrad Med J*. 2012;88(1036):59-65.
19. Baird B, Charles A, Honeyman M, Maguire D, Das P. Understanding pressures in general practice.

London: The Kings Fund; 2016.

20. Youssef E, Wright J, Delpech V, Davies K, Brown A, Cooper V, et al. Factors associated with testing for HIV in people aged ≥50 years: a qualitative study. *BMC Public Health* (*under review*). 2018.
21. Elmahdi R, Gerver S, Gomez Guillen G, Fidler S, Cooke G, Ward H. Low levels of HIV test coverage in clinical settings in the UK: a systematic review of adherence to 2008 guidelines. *Sex Transm Infect*. 2014;90(2):119-24.
22. White B, Walsh J, Rayasam S, Pathman D, Adimora A, Golin C. What Makes Me Screen for HIV? Perceived Barriers and Facilitators to Conducting Recommended Routine HIV Testing among Primary Care Physicians in the Southeastern United States. *Journal of the International Association of Providers of AIDS Care*. 2015;14(2):127-35.
23. Iyer K, Arumugam V, Castor T, Malik R, Ehrlich A. Physicians' screening for HIV risk factors in older adults. *Journal of the American Geriatrics Society*. 2011;59(S200).
24. Barnett L. Factors contributing to the increase in HIV/AIDS and late diagnoses of the virus among older adults. 2012;72:1-140.
25. Bodley-Tickell A, Olowokure B, Bhaduri S, White D, Ward D, Ross J, et al. Trends in sexually transmitted infections (other than HIV) in older people: analysis of data from an enhanced surveillance system. *Sex Transm Infect*. 2008;84(4):312-7.
26. Lindau S, Schumm P, Laumann E, Levinson W, O'Muircheartaigh C, Waite L. A study of sexuality and health among older adults in the United States. *The New England Journal of Medicine*. 2007;357:762-74.
27. Nay R, McAuliffe L, Bauer M. Sexuality: from stigma, stereotypes and secrecy to coming out, communication and choice. *Int J Older People Nurs*. 2007;2(1):76-80.
28. de Visser R, Badcock P, Rissel C, Richters J, Smith A, Grulich A, et al. Safer sex and condom use:

findings from the Second Australian Study of Health and Relationships. *Sex Health*.

2014;11(5):495-504.

29. Reece M, Herbenick D, Schick V, Sanders S, Dodge B, Fortenberry J. Condom use rates in a national probability sample of males and females ages 14 to 94 in the United States. *J Sex Med*. 2010;7(Suppl 5):266-76.
30. Bauer M, McAuliffe L, Nay R. Sexuality, health care and the older person: an overview of the literature. *Int J Older People Nurs*. 2007;2(1):63-8.
31. de Visser R, Badcock P, Simpson J, Grulich A, Smith A, Richters J, et al. Attitudes toward sex and relationships: the Second Australian Study of Health and Relationships. *Sex Health*. 2014;11(5):397-405.

Table 1: Demographics of included clinician participants

Study number	Speciality	Department type	HIV prevalence
021	Respiratory	Medical	High
022	Urology	Surgical	High
023	Urology	Surgical	High
024	Respiratory	Medical	High
025	Orthopaedic	Surgical	High
026	Emergency	Acute/Emergency Medicine	High
027	Acute Medical Unit	Acute/Emergency Medicine	High
028	Cardiology	Medical	Low
029	Urology	Surgical	Low
030	Oral & maxillofacial	Surgical	High
031	Endocrinology	Medical	Low
032	Emergency	Acute/Emergency Medicine	High
033	Respiratory	Medical	Low
034	Respiratory	Medical	High
035	Ophthalmology	Surgical	Low
036	Neurology	Medical	Low
037	Rheumatology	Medical	Low
038	Breast Surgery	Surgical	High
039	Dermatology	Medical	High
040	Cardiology	Medical	Low

Figure 1: Thematic map of identified themes

